

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012632**Date Inspected:** 13-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Names listed below.**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girders**Summary of Items Observed:**

The Quality Assurance Inspector (QAI), Scott Croff, was present at the Self Anchored Span (SAS) job site to observe the scheduled fabrication and welding of components for the SFOBB project. The following observations were made:

- 1) OBG L1E/L2E field splice welding (FSW) - plate A repairs
- 2) OBG L1E/L2E FSW - plate B, C & F welding
- 3) OBG L3E/L4E - plate A fit-up
- 4) OBG L2E/L3E - plate C fit-up
- 5) OBG L2E/L3E FSW - plate D welding

1) The QAI arrived at OBG L1E/L2E field splice, deck plate A and noted that repairs are being made by ABF personnel. The QAI met with the Quality Control (QC) Inspectors Steven McConnell and Tom Pasqualone and inquired about the status of the repairs. The QAI was informed that during Ultrasonic Testing (UT) of the complete joint penetration (CJP) welds of the deck splice, several rejectable indications were identified. The QAI was informed that 2 repairs have been welded so far (A3+180mm and A3+324mm), and that 3 repairs are left (A2+4605mm, A3+5280mm and A4+4897mm). The QAI was informed that only 1 repair will be excavated and welded at a time. The QAI was informed that Mitch Sittinger, ID 0315, will use shielded metal arc welding (SMAW) to make the repair CJP welds. The QAI made random observations of the work in progress, the excavations were observed and appeared to be generally conforming to the contract requirements. See the attached photo. The QAI noted that the welds were removed to the backing bar and the QC Inspector Tom Pasqualone conducted magnetic particle testing (MT) of the excavations. The QAI noted that the QC Inspector

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

Tom Pasqualone is also monitoring the repair welding. The QAI noted that 1/8" E7018 electrodes with Welding Procedure Specification (WPS) ABF-WPS-D15-1000-Repair is being used. The QAI made random observations of welding parameters, preheat and interpass temperatures. The QAI noted that the measured welding parameters and temperatures appeared to be within the ranges listed on the repair WPS. See the attached photo. As the repair welds were completed, the QAI noted that they were ground flush and smooth with the deck surface. The QAI witnessed the QC Inspector conducting MT and UT of the completed repairs. The QAI was informed that the repairs were acceptable. The QAI conducted verification UT. At the time of examination, there were no rejectable indications observed. See the appropriate UT report (TL-6027) for additional information. The ABF Engineer John Callaghan informed the QAI that at the end of the work day, the deck splice (plate A) will be painted with a rust preventing primer. The QAI did not observe this work. The QAI noted that all of the identified CJP field splice repairs were completed, accepted by QC and have been verified by the QAI.

2) The QAI observed ABF personnel preparing and welding plates B, C and F at L1E/L2E field splice. The QAI noted that these welds are CJP with backing bars that will be removed. The QAI has previously observed and reported that the backing bar of the deck splice (plate A), which is left in place, runs through the weld joints of plates B and F. The QAI noted that the QC Inspector Tom Pasqualone is monitoring the welding of plates B & F and was asked how the welds will be made where the backing bar intersects the deck plate A weld. The QAI was informed that ABF has not determined how the intersections will be welded at this time and that the welders, Jin Quan Huang, ID 9340 and Chun Fai Tsui, ID 3426, have been instructed to stop the vertical (3G) CJP welds approximately 200mm from the intersection. The QAI was informed that the 3G welding is being made using gas shielded flux-cored arc welding (FCAW-G) and ABF-WPS-D15-3040B-3. The QAI also noted that FCAW-G is being performed on plate C, on the interior of the OBG field splice. The QAI observed ABF personnel Rory Hogan, ID 3186 and Jeremy Dolman, ID 5042, making the welds. The QAI noted that the weld portion from 0 (edge to plate B) to stiffener #6 is being welded. The QAI noted that the QC Inspector Bernie Docena is monitoring the welding at this location. The QAI was informed that the weld portion between stiffener #18 to #24 will be welded next. The QAI was informed that the same WPS in use is the same as listed above.

3) The QAI observed the installation and fillet welding of temporary attachments (fit up gear) on the bottom of plate A at OBG L3E/L4E field splice. The temporary fillet welding was performed by ABF welder Rick Clayborn, ID 2273. The QAI noted that the QC Inspector Bonifacio Daquinag Jr. is monitoring the welding of the fit up aids at this location. The QAI noted that SMAW with 1/8" E7018 electrodes with ABF-WPS-D15-F1200A-1 is being used for the temporary fillet welds. The QAI made random observations of welding parameters and preheat temperature which were measured at 135 DC amps and a minimum temperature of 150°F. The QAI noted that the workmanship appeared to be generally conforming to the contract requirements. The QAI noted that ABF personnel are working to align the deck plate's horizontal plane (high-low) across the field splice. The QAI noted that the joint fit-up has not been accepted by the QC Inspector at this time. The QAI was informed that the fit-up crew will begin fitting up the L2E/L3E side plates next.

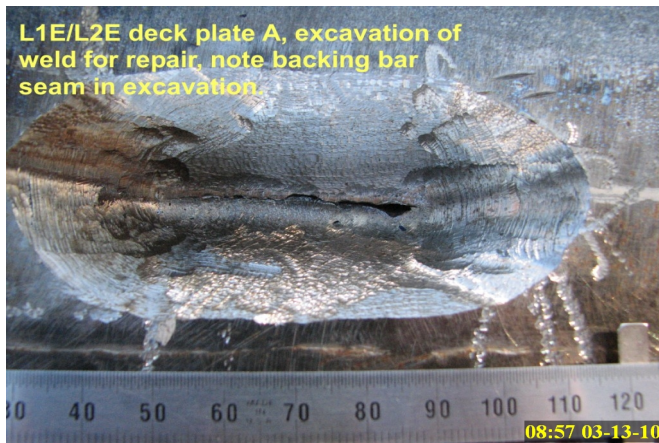
4) The QAI observed the installation and fillet welding of temporary attachments (fit up gear) on the bottom of plate C at OBG L2E/L3E field splice. The temporary fillet welding was performed by ABF welder Rick Clayborn, ID 2273. The QAI noted that the QC Inspector Bonifacio Daquinag Jr. is monitoring the welding of the fit up aids at this location. The QAI noted that SMAW with 1/8" E7018 electrodes with ABF-WPS-D15-F1200A-1 is being used for the temporary fillet welds. The QAI made random observations of welding parameters and preheat temperature which were measured at 135 DC amps and a minimum temperature of 150°F. The QAI noted that the

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

workmanship appeared to be generally conforming to the contract requirements. The QAI noted that ABF personnel are working to align the deck plate's horizontal plane (high-low) across the field splice. The QAI noted that the work was in progress and the joint fit-up has not been accepted by the QC Inspector at this time. See the attached photo.

5) The QAI observed ABF personnel making FCAW-G CJP welds at the L2E/L3E plate D field splice. The QAI noted that the QC Inspector James Cunningham is monitoring the welding at this location. The QAI was informed that fill and cover welds are being made in areas where submerged arc welding (SAW) could not be used to complete the splice welds. The QAI noted that Song Tao Huang, ID 3794 and James Zhen, ID 6001, are making the welds with ABF-WPS-D15-3040B-1. The QAI randomly measured the preheat, interpass temperature and welding parameters of the work in progress and noted that they appeared to be conforming to the WPS requirements. See the attached photo.



Summary of Conversations:

As noted above, the QAI had conversations with QC Inspectors and ABF personnel regarding the welding in progress. There were additional conversations regarding the weld repairs and as they were being accepted by QC, the QAI was informed. The QAI relayed the observations of welding and status of repairs to the QAI Bill Levell. The QAI also generated a shift turn-over report with this information. There were no other notable observations or conversations during this shift.

Comments

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi, (916)813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Croff, Scott	Quality Assurance Inspector
Reviewed By:	Levell, Bill	QA Reviewer
